

Claims:

[30020533 US]

1. A power measurement system for measuring power of an electromagnetic signal, the system comprising:
 - 5 a measuring unit for translating an electrical signal originating from a sensor into a power measurement;
a sensor unit comprising the sensor and an amplification circuit;
a cable for coupling the measuring unit to the sensor unit, the sensor unit and the cable defining a path for communicating the electrical signal originating
 - 10 from the sensor to the measuring unit; and
a source of a reference signal capable of being tapped into the path in order to communicate the reference signal to the measuring unit.
2. A system as claimed in Claim 1, wherein the source of the reference
- 15 signal is arranged to be coupled to the amplification circuit in place of the sensor.
3. A system as claimed in Claim 1, wherein the source of the reference signal is arranged to be coupled to the amplification circuit in addition to the
- 20 sensor as a stimulus to the sensor.
4. A system as claimed in Claim 1, wherein the reference signal is a Direct Current (DC) signal.
- 25 5. A system as claimed in Claim 1, wherein the sensor unit further comprises a temperature dependent component for providing an indication of the temperature within the sensor unit.
6. A system as claimed in Claim 3, wherein the reference signal is varied in
- 30 amplitude to characterise the sensor.
7. A sensor unit apparatus for a power measurement system, the apparatus comprising:

a sensor;
an amplification circuit coupled to the sensor; and
a source of a reference signal capable of being coupled to the
amplification circuit for communicating the reference signal to a measuring unit
5 via a cable.

8. An apparatus as claimed in Claim 7, wherein the source of the reference
signal is arranged to be coupled to the amplification circuit in place of the
sensor.

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9. An apparatus as claimed in Claim 7, wherein the source of the reference
signal is arranged to be coupled to the amplification circuit in addition to the
sensor as a stimulus to the sensor.

15 10. An apparatus as claimed in Claim 7, wherein the source of the reference
signal is arranged to generate a fixed reference signal.

11. An apparatus as claimed in Claim 7, further comprising a temperature
dependent component for providing an indication of the temperature within the
20 sensor unit apparatus.

12. An apparatus as claimed in Claim 7, wherein the reference signal is a
Direct Current (DC) signal.

25 13. An apparatus as claimed in Claim 9, wherein the reference signal is
varied in amplitude to characterise the sensor.

14. A method of maintaining accuracy of a power measurement system
comprising a sensor unit coupled to a meter unit by a cable, the method
30 comprising the steps of:

generating a test signal;
receiving the test signal at the meter unit via a path defined by the sensor
unit, the cable and the meter unit; and

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calibrating the meter unit in response to the test signal;
the test signal being a reference signal tapped into the path.